

Chapter 1

Introduction

Contents

Chapter 1	Introduction	1-1
1.1	Background	1-1
1.1.1	Policy Foundation	1-3
1.2	Planning Goals and Conservation Objectives	1-5
1.3	Regulatory Context	1-6
1.3.1	Regulatory Purpose.....	1-6
1.3.2	Federal Endangered Species Act.....	1-7
1.3.2.1	Compliance with the Fish and Wildlife Services' Five-Point Policy Guidance	1-9
1.3.3	Natural Community Conservation Planning Act	1-10
1.3.4	California Endangered Species Act	1-11
1.3.5	National Environmental Policy Act	1-11
1.3.6	California Environmental Quality Act	1-12
1.3.7	Relationship to Existing Biological Opinions	1-12
1.3.8	Relationship to Other Federal and State Laws and Regulations.....	1-12
1.3.8.1	Section 404 of the Clean Water Act.....	1-13
1.3.8.2	Section 401 of the Clean Water Act.....	1-14
1.3.8.3	Section 10 of the Rivers and Harbors Act	1-14
1.3.8.4	Section 14 of the Rivers and Harbors Act (Section 408)	1-14
1.3.8.5	California Fish and Game Code Section 1600 <i>et seq.</i>	1-14
1.3.8.6	Migratory Bird Treaty Act	1-15
1.3.8.7	Fish and Wildlife Coordination Act	1-15
1.3.8.8	Water Rights under the California Water Code.....	1-15
1.3.8.9	Porter-Cologne Water Quality Control Act.....	1-16
1.4	Scope.....	1-17
1.4.1	Geographic Scope of the Plan Area	1-17
1.4.2	Natural Communities	1-18
1.4.3	Covered Species	1-19
1.4.3.1	Species Evaluated for Coverage.....	1-19
1.4.3.2	Evaluation and Selection Criteria.....	1-20
1.4.4	Covered Activities and Associated Federal Actions	1-23
1.4.4.1	Covered Activities	1-23
1.4.4.2	Associated Federal Actions	1-23
1.4.5	Permit Duration	1-23
1.5	Relationship to Other Plans in the Delta	1-24
1.5.1	The Delta Plan	1-24

1	1.5.2	East Contra Costa County Habitat Conservation Plan/Natural Community	
2		Conservation Plan	1-25
3	1.5.3	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan	1-25
4	1.5.4	South Sacramento Habitat Conservation Plan	1-26
5	1.5.5	Yolo Natural Heritage Program	1-26
6	1.5.6	Solano Habitat Conservation Plan	1-26
7	1.5.7	East Alameda County Conservation Strategy	1-27
8	1.5.8	Suisun Marsh Habitat Management, Preservation, and Restoration Plan	1-27
9	1.6	Overview of the Planning Process	1-34
10	1.6.1	Public Participation	1-34
11	1.6.2	Integration of Science	1-37
12	1.6.2.1	Independent Science Advisory Process	1-37
13	1.6.3	Organization.....	1-39
14	1.7	References	1-40
15	1.7.1	Literature Cited	1-40
16			

1 Tables

2		Page
3	1-1	BDCP Steering Committee Members 1-4
4	1-2	BDCP Covered Species..... 1-21
5	1-3	BDCP Proposed Covered Species and Species Covered by Overlapping Regional
6		Conservation Plans, including HCPs and NCCPs 1-29

9 Figures

10 **All figures appear at the end of the chapter.**

11	1-1	BDCP Plan Area Location
12	1-2	BDCP Plan Area in Relation to Neighboring Conservation Plan Boundaries

1 Acronyms and Abbreviations

BA	biological assessment
Bay-Delta Plan	Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary
BDCP or Plan	Bay Delta Conservation Plan
BiOp	biological opinion
CALFED	California Bay-Delta Authority
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNPS	California Native Plant Society
Council	Delta Stewardship Council
CVP	Central Valley Project
CWA	Clean Water Act
Delta	Sacramento-San Joaquin River Delta
DFG	California Department of Fish and Game
DRERIP	Delta Region Ecosystem Restoration Implementation Plan
DWR	California Department of Water Resources
EIR	environmental impact report
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
Fish & Game Code	California Fish and Game Code
FR	Federal Register
HCP	habitat conservation plan
IEP	Interagency Ecological Program
MBTA	Migratory Bird Treaty Act
MOA	memorandum of agreement
NCCP	natural community conservation plan
NCCPA	Natural Community Conservation Planning Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
Plan	Bay Delta Conservation Plan
Porter-Cologne	Porter-Cologne Water Quality Control Act
Reclamation	Bureau of Reclamation
RWQCB	Regional Water Quality Control Board

San Joaquin County HCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
SB	Senate Bill
State Water Board	State Water Resources Control Board
SWP	State Water Project
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service

Chapter 1

Introduction

1.1 Background

The Bay Delta Conservation Plan (BDCP or Plan) sets out a comprehensive conservation strategy for the Sacramento-San Joaquin River Delta (Delta) designed to restore and protect ecosystem health, water supply, and water quality within a stable regulatory framework. The BDCP reflects the outcome of a multiyear collaboration between public water agencies, state and federal fish and wildlife agencies, nongovernment organizations, agricultural interests, and the general public.

The BDCP is intended to result in a permit decision concerning long-term regulatory authorizations under state and federal endangered species laws for the operations of the State Water Project (SWP) and the Central Valley Project (CVP). The Plan will further provide the basis for durable regulatory assurances. Specifically, the BDCP serves as a natural community conservation plan (NCCP) under the state's Natural Community Conservation Planning Act (NCCPA), and a habitat conservation plan (HCP) under Section 10 of the federal Endangered Species Act (ESA). The BDCP is a joint HCP/NCCP, which will support the issuance of permits from the California Department of Fish and Game (DFG) under Section 2835 of the NCCPA, and permits from the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) pursuant to Section 10 of the ESA. DFG, USFWS, and NMFS are collectively referred to as the state and federal fish and wildlife agencies (or the fish and wildlife agencies).

The Plan will also provide the basis for a biological assessment (BA) that supports new ESA Section 7 consultations between the Bureau of Reclamation (Reclamation), USFWS, and NMFS. The parties seeking take authorizations pursuant to the BDCP and the associated biological assessments are referred to as the *Potential Authorized Entities*. The Potential Authorized Entities include the California Department of Water Resources (DWR), Reclamation, and certain federal and state water contractors listed below.

- Kern County Water Agency
- Metropolitan Water District of Southern California
- San Luis and Delta-Mendota Water Authority
- Santa Clara Valley Water District
- State and Federal Water Contractors Agency
- Westlands Water District
- Zone 7 Water Agency

See Chapter 7, *Implementation Structure*, Section 7.1.2 for more details on Potential Authorized Entities and related entities.

Consistent with the goals of the NCCPA, the BDCP has been designed to mitigate for the effects of the activities proposed in this Plan, contribute to the recovery of threatened and endangered species, help prevent species from becoming threatened or endangered, and improve ecosystem health. To

achieve these important goals, the Plan will be funded by the Proposed Authorized Entities as well as the public at large through state and federal agencies and other public funding sources.

The BDCP is further intended to meet the standards set out in the Sacramento-San Joaquin Delta Reform Act of 2009, which provides for the incorporation of the BDCP in a comprehensive management plan for the Delta (known as the Delta Plan) (California Water Code 35). Although BDCP development began over three years before the Delta Plan and BDCP is a separate plan, it will be included in the Delta Plan, which serves similar goals.

Unlike past regulatory approaches, which have relied almost exclusively on iterative adjustments to the operations of the SWP and CVP, the BDCP prescribes actions that will produce fundamental, systemic, and long-term physical changes to the Delta. These changes will occur within a more stable regulatory framework and involve substantial alterations to water conveyance infrastructure and water management regimes in combination with extensive restoration of habitat and actions to reduce the impacts of various biological stressors. To further advance this holistic approach and enhance opportunities for success, the BDCP has been designed to accommodate and respond over time to new information and greater scientific understanding of the Delta.

The BDCP provides a comprehensive conservation strategy to meet a series of broad planning goals (Section 1.2, *BDCP Planning Goals and Conservation Objectives*) and a range of specific biological goals and objectives (Chapter 3, Section 3.3, *Biological Goals and Objectives*). The BDCP includes a description of each element of the conservation strategy and the rationale for its inclusion. The BDCP further describes the expected contribution of each Plan element toward advancing both the overall planning goals and specific biological goals and objectives. The conservation strategy was informed by the collective experiences of professionals working in the Delta for over 40 years, monitoring results and conceptual models developed over time through prior scientific efforts (e.g., those conducted by the California Bay-Delta Authority [CALFED] Science Program), and supplemented by data and analysis developed through the BDCP process. The conservation strategy is based on the best available science and was built upon the following broad conservation goals (see Chapter 3, *Conservation Strategy*, for a discussion of how these goals are met and why they are important).

- Increase the quality, availability, spatial diversity, and complexity of aquatic habitat within the Delta.
- Create new opportunities to restore the ecological health of the Delta by modifying the water conveyance infrastructure.
- Directly address key ecosystem drivers in addition to freshwater flow patterns rather than manipulation of Delta flow patterns alone.
- Improve connectivity among aquatic habitats, facilitate migration and movement of covered fish among habitats, and provide transport flows for the dispersal of planktonic material (organic carbon), phytoplankton, zooplankton, macroinvertebrates, and fish eggs and larvae.
- Improve synchrony between environmental cues and conditions and the life history of covered fish and their food resources within the upstream rivers, Delta, and Suisun Bay, including seasonal water temperature gradients, salinity gradients, turbidity, and other environmental cues.

- Reduce sources of direct mortality, and other stressors, on the covered fish and the aquatic ecosystem within the Delta.
- Improve habitat conditions for covered fish within the Delta and downstream within the low salinity zone of the estuary in Suisun Bay through the integration of water operations with physical habitat enhancement and restoration.
- Avoid, minimize, and mitigate adverse effects on terrestrial wildlife and plants resulting from implementation of measures to benefit aquatic species.
- Expand the extent and enhance the functions of existing natural communities and habitat of covered wildlife and plants that is permanently protected.
- Restore habitat to expand the populations and distributions of covered wildlife and plant species.
- Emphasize natural physical habitat and biological processes to support and maintain species covered by the Plan (i.e., covered species) and their habitat.

The BDCP Plan Area covers the Sacramento-San Joaquin Delta, as defined by California Water Code Section 12220 (*statutory Delta*), as well as certain additional areas in which conservation measures will be implemented (Section 1.4.1, *Geographic Scope of the Plan Area*) (Figure 1-1).

The infrastructure of the state and federal water projects form an integrated system that extends beyond the boundaries of the Delta; as such, the BDCP will affect water operations and species and habitat both inside and outside of the Delta. While the geographic scope of the Plan Area generally does not include areas upstream and downstream of the Delta, the Plan does address the upstream and downstream effects of covered activities (Chapter 5, *Effects Analysis*).

1.1.1 Policy Foundation

In January 2006, a number of stakeholders with diverse interests in the Delta, including public water agencies, environmental and conservation organizations, and other parties, agreed to a Statement of Principles that called for the development of a comprehensive conservation plan for the Delta. The parties to that agreement envisioned a plan that would advance the recovery of fish and wildlife species affected by certain water supply-related activities and provide long-term assurances regarding the operation of existing and future water-related facilities and other activities associated with the SWP and the CVP.

In July 2006, several of these parties entered into a memorandum of agreement (MOA)¹ that set out the financial commitments of the parties to carry out actions to satisfy existing regulatory requirements related to operation of the SWP and the CVP, and to develop a conservation plan for the Delta that would support new regulatory authorizations under state and federal endangered species laws for current and future activities related to the SWP and CVP.

At the same time, the California Resources Agency (now the California Natural Resources Agency) convened a diverse group of stakeholders and regulatory agencies to help guide the development of a comprehensive conservation plan for the Delta, which became known as the BDCP. The resulting

¹ This and all other public documents related to the BDCP are available on the BDCP web site: www.baydeltaconservationplan.org.

BDCP Steering Committee (Table 1-1) consisted of parties to the Statement of Principles and MOA as well as other interested groups and additional state and federal agencies, all of whom indicated their commitment to engage in a process to advance the coequal goals of ecosystem restoration and water supply reliability. In December 2006, the original members of the Steering Committee entered into a formal Planning Agreement, consistent with requirements of the NCCPA, for the development of the BDCP. The Planning Agreement, among other things, defined the goals, commitments, and expectations of the parties regarding the BDCP planning process. It also reiterated the goal to develop a conservation plan that would meet the requirements of the ESA and the NCCPA.

At the end of 2010, meetings of the Steering Committee were suspended and the state and federal water agencies seeking incidental take permits and other authorizations contingent on the Plan, in coordination with the resource agencies, began to guide the Plan through the final stages of development and approval. Steering Committee members and other agencies and individuals continued to participate in and help guide the Plan through a series of focused working groups (described in Section 1.6.1, *Public Participation*) that advised the California Department of Water Resources (DWR), which is responsible for the Plan in its final form.

Table 1-1. BDCP Steering Committee Members

Entities	
State and Federal Agencies	
<ul style="list-style-type: none"> • Bureau of Reclamation • California Department of Fish and Game • California Department of Water Resources • California Natural Resources Agency • National Marine Fisheries Service (<i>ex officio</i>) • State Water Resources Control Board (<i>ex officio</i>) • U.S. Army Corps of Engineers (<i>ex officio</i>) • U.S. Fish and Wildlife Service (<i>ex officio</i>) 	
Potential Authorized Entities (formerly Potential Regulated Entities)	
<ul style="list-style-type: none"> • Kern County Water Agency • Metropolitan Water District of Southern California • San Luis & Delta-Mendota Water Authority • Santa Clara Valley Water District • Westlands Water District • Zone 7 Water Agency 	
Environmental Organizations	
<ul style="list-style-type: none"> • American Rivers • Defenders of Wildlife • Environmental Defense Fund • Natural Heritage Institute • The Nature Conservancy • The Bay Institute 	
Other Member Agencies	
<ul style="list-style-type: none"> • California Farm Bureau Federation • Contra Costa Water District • Friant Water Authority 	

Entities
<ul style="list-style-type: none"> • North Delta Water Agency
Other Ex Officio Member Agencies
<ul style="list-style-type: none"> • Delta Stewardship Council (formerly the Bay-Delta Authority)
Note: The State Water Board and U.S. Army Corps of Engineers are not signatories of the Planning Agreement.
Note: <i>ex officio</i> represents nonvoting agencies that provide guidance.

1.2 Planning Goals and Conservation Objectives

The overarching goals of the BDCP are to advance the restoration of the ecological functions and productivity in the Delta and restore and protect water supplies provided by the SWP and CVP, as first stated in the Statement of Principles and reaffirmed in the BDCP Planning Agreement. The Planning Agreement further articulated specific planning goals to guide the development of the BDCP and further ensure its consistency with the broader goals of the Plan. The planning goals for the BDCP are as follows.

- Provide for the conservation and management of covered species within the Plan Area.
- Preserve, restore, and enhance aquatic, riparian and associated terrestrial natural communities and ecosystems that support covered species within the Plan Area through conservation partnerships.
- Allow for projects to proceed that restore and protect water supply, water quality, and ecosystem health within a stable regulatory framework.
- Provide a means to implement covered activities in a manner that complies with applicable state and federal fish and wildlife protection laws, including the CESA and ESA, and other environmental laws, including the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).
- Provide a basis for permits necessary to lawfully take covered species.
- Provide a comprehensive means to coordinate and standardize mitigation and compensation requirements for covered activities within the Plan Area.
- Provide a less costly, more efficient project review process that results in greater conservation values than project-by-project, species-by-species review.
- Provide clear expectations and regulatory assurances regarding covered activities occurring within the Plan Area.

Throughout the planning process, the Steering Committee worked to develop a plan consistent with these planning goals. The BDCP reflects these goals and provides the basis for conservation and regulatory outcomes identified in the Planning Agreement. The BDCP process was also guided by a set of conservation objectives that were first expressed in the Planning Agreement. These preliminary conservation objectives included the following.

- Provide for the protection of covered species and associated natural communities and ecosystems in the Plan Area.

- Preserve the diversity of native fish, wildlife, plant, and natural communities in the Plan Area.
- Minimize and mitigate, as appropriate, the take of proposed covered species.
- Preserve and restore habitat and contribute to the recovery of covered species.
- Reduce the need to list additional species.
- Set forth species-specific goals and objectives.
- Set forth specific habitat-based goals and objectives.
- Implement an adaptive management and monitoring program to respond to changing ecological conditions.
- Avoid actions that are likely to jeopardize the continued existence of covered species or result in the destruction or adverse modification of critical habitat.

These planning goals and preliminary conservation objectives set the initial direction for the BDCP planning process. As the planning process progressed, the preliminary conservation objectives evolved into specific biological goals and objectives that the BDCP would be expected to meet during its implementation. These specific biological goals and objectives are described in Chapter 3, Section 3.3, *Biological Goals and Objectives*, and are set out in a hierarchical framework that distinguishes between landscape-level goals and objectives, natural community goals and objectives, and species-specific goals and objectives. The biological goals reflect broad principles while the biological objectives identify more specific targets that the BDCP should meet to achieve its overall biological goals. These objectives include measureable metrics or criteria to enable ongoing assessment of BDCP effectiveness throughout its implementation.

1.3 Regulatory Context

1.3.1 Regulatory Purpose

The BDCP provides the basis for regulatory compliance with ESA and the NCCPA for a range of activities related to the operation of the SWP and CVP, including the diversion and export of water from the Delta and its tributaries. The BDCP advances a comprehensive solution to the persistent regulatory challenges that have faced the SWP and CVP. This comprehensive solution includes systemic changes to water conveyance infrastructure and broad-scale restoration and enhancement of ecological resources. This approach is intended to result in long-term regulatory stability for the state and federal water projects, while furthering the goals of water supply reliability and ecological conservation.

The BDCP is a joint HCP/NCCP, which will support the issuance of incidental take authorizations from USFWS and NMFS pursuant to Section 10 of the ESA, and take authorizations from DFG under Section 2835 of the NCCPA to the nonfederal applicants (16 United States Code [USC] 1539.; California Fish and Game Code [Fish & Game Code] 2835 *et seq.*). The BDCP has also been designed to meet the standards of Section 2081 of the CESA. The BDCP will also support the issuance of take permits from USFWS and NMFS under Section 10(a)(1)(B) of the ESA. The BDCP will further provide the basis for a BA to support the issuance of incidental take authorizations from USFWS and NMFS to Reclamation, pursuant to Section 7 of the ESA, for its actions in the Delta.

To meet these regulatory objectives, the BDCP sets out a comprehensive conservation strategy addressing the adverse effects of SWP and CVP actions on aquatic and terrestrial species in the Plan Area, most of which are currently listed under the ESA or CESA as threatened, endangered, or as candidates for listing. The conservation strategy also addresses designated critical habitat, if any, that has been designated for these species pursuant to the ESA (Chapter 3, *Conservation Strategy*). The BA for CVP-related activities in the Delta will incorporate the BDCP conservation strategy as it relates to those federal actions. It should be noted that the BDCP does not attempt to distinguish precisely between the effects on covered species attributable to the CVP-related activities and those of the SWP. Rather, the BDCP includes a comprehensive analysis of the effects associated with the SWP and CVP within the Plan Area and intended to provide a conservation strategy that adequately addresses the totality of those effects. On the basis of the BDCP, USFWS and NMFS are expected to issue Section 10 permits. An integrated biological opinion (BiOp) on coordinated long-term operation of the CVP and SWP will be completed which incorporates the BDCP conservation strategy as part of its proposed action.

Operations of the state and federal water projects in the Delta have been subject to frequent litigation recently regarding the federal and state endangered species acts. Outcomes of this litigation have often disrupted operations, restricted water supply, or compromised species viability. Past efforts have also focused relatively narrowly on single species or just on the aquatic ecosystem, without considering related species and natural communities such as those in terrestrial systems. Considering that Delta water supplies are increasingly constrained by recurring drought conditions and the worsening effects of climate change, there is a need for comprehensive, legally defensible regulatory solutions to the environmental and water supply challenges in the Delta. The BDCP provides a unique opportunity to meet this need.

1.3.2 Federal Endangered Species Act

The United States Congress passed the ESA in 1973 to provide a means for conserving endangered and threatened species and the ecosystems they require in order to prevent species extinctions. The ESA has three major components relevant to the BDCP.

- Section 7 requires that federal agencies ensure, in consultation with the federal fish and wildlife agencies, that their actions are not likely to jeopardize the continued existence of species or result in modification or destruction of critical habitat.
- Section 9 prohibits the taking of listed species.
- Section 10 provides for issuing permits to nonfederal entities for the incidental take of listed species.

Section 7 of the ESA provides that each federal agency must ensure, in consultation with the Secretary of the Interior or Commerce, that any actions authorized, funded, or carried out by the agency are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of areas determined to be critical habitat (16 USC 1536(a)(2)). Section 7 requires federal agencies to engage in formal consultation with USFWS and/or NMFS for any proposed actions that are likely to adversely affect listed species. A BiOp is issued by USFWS or NMFS at the completion of formal consultation. The BiOp can conclude that the project as proposed is either likely or not likely to jeopardize the continued existence of the species. If the BiOp concludes “no jeopardy,” the action can proceed as proposed. If the BiOp

concludes “jeopardy,” USFWS or NMFS will identify “reasonable and prudent alternatives” to the proposed action that would avoid jeopardizing the species. Included in the BiOp is an incidental take statement that authorizes a specified level of take anticipated to result from the proposed action. The incidental take statement contains “reasonable and prudent measures” that are designed to minimize the level of incidental take and that must be implemented as a condition of the take authorization (50 Code of Federal Regulations [CFR] 402.14(i)(5)).

Section 9(a)(1)(B) of the ESA prohibits the take by any person of any endangered fish or wildlife species; take of threatened fish or wildlife species is prohibited by regulation. The ESA prohibits the take of any listed threatened fish or wildlife species in violation of any regulation promulgated by the USFWS or NMFS. *Take* under ESA is defined broadly to mean harass, harm, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct (16 USC 1532 [1988]). *Harm* is defined by regulation to mean an act that actually kills or injures wildlife, including those activities that cause significant habitat modification or degradation resulting in the killing or injuring of wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering (50 CFR 17.3).² The take prohibitions of the ESA apply unless take is otherwise specifically authorized or permitted pursuant to the provisions of Section 7 or Section 10 of the ESA. The protections for listed plant species under the ESA are more limited than for fish and wildlife.³

Section 10 of the ESA specifically addresses the authorization for take by nonfederal entities through the development of an HCP. For those actions for which no federal nexus exists, private individuals, corporations, state and local government agencies, and other nonfederal entities who wish to conduct otherwise lawful activities that may incidentally result in the take of a listed species must first obtain a Section 10 incidental take permit from USFWS and/or NMFS. The nonfederal entity is required to develop an HCP as part of the permit application process.

Under Section 10(a)(1)(B) of the ESA, USFWS and NMFS may permit the incidental take of listed species that may occur as a result of an otherwise lawful activity. To obtain a Section 10(a)(1)(B) permit, an applicant must prepare an HCP that meets the following five criteria.

- The taking will be incidental to an otherwise lawful activity.
- The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.
- The applicant will ensure that adequate funding for the Plan will be provided.

² NMFS has a similar definition that adds the concepts of spawning and migrating to examples of injury. NMFS defines *harm* as “an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering” (50 CFR 222.102).

³ Section 9(a)(2)(B) of the ESA prohibits removal, possession, or malicious damage or destruction of endangered plants in areas under federal jurisdiction, as well as actions that remove, cut, dig up, damage, or destroy endangered plants in areas outside of federal jurisdiction in violation of any state law or regulation, including state criminal trespass law. Protection for threatened plant species is limited to areas under federal jurisdiction (50 CFR 17.71(a)). The ESA section 7(a)(2) prohibition against jeopardy applies to plants, wildlife, and fish equally, and USFWS and NMFS may not issue a section 10(a)(1)(B) permit if the issuance of that permit would result in jeopardy to any listed species.

- The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.
- Other measures, if any, which the USFWS and NMFS require as being necessary or appropriate for purposes of the Plan will be met (16 USC 1539(a)(2)(A)).

The BDCP is intended to meet all regulatory requirements necessary for USFWS and NMFS to issue Section 10 permits to allow incidental take of all proposed covered species as a result of covered activities undertaken by DWR and certain SWP contractors. The BDCP is also intended to support issuance of Section 7 BiOps to authorize incidental take for covered actions undertaken by Reclamation and CVP contractors. Ultimately, a Section 7 consultation will be completed on coordinated long-term operation of the CVP and SWP to authorize incidental take associated with Reclamation's actions. The BDCP will provide the basis for BAs that support new Section 7 consultations between Reclamation, USFWS, and NMFS.

1.3.2.1 Compliance with the Fish and Wildlife Services' Five-Point Policy Guidance

In 2000, USFWS and NMFS adopted a five-point policy designed to clarify elements of the habitat conservation planning program as they relate to biological goals, adaptive management, monitoring, permit duration, and public participation. The Final Addendum to the Handbook for Habitat Conservation Planning and Incidental Take Permitting (65 *Federal Register* [FR] 106) (hereinafter referred to as the five-point policy) directs that the following elements be addressed in the development of habitat conservation plans.

1. Biological Goals and Objectives

HCPs are required to define biological goals and objectives that the Plan is intended to achieve. Biological goals and objectives clarify the purpose and direction of the Plan's conservation program. The BDCP sets out extensive biological goals and objectives, including specific measurable targets that the Plan is designed to meet. These targets were developed on the basis of the best available scientific information and have been used as parameters and benchmarks to guide the conservation strategies for the species and natural communities covered by the Plan (Section 3.3, *Biological Goals and Objectives*).

2. Adaptive Management

The five-point policy encourages the inclusion of adaptive management strategies in HCPs in appropriate circumstances to address uncertainty related to species covered by a plan. The agencies describe adaptive management as a "method for examining alternative strategies for meeting measurable biological goals and objectives, and then if necessary, adjusting future conservation management actions according to what is learned" (65 FR 106). The BDCP incorporates an adaptive management process that is designed to facilitate and improve decision-making during the implementation of the Plan and identify adjustments and modifications, as defined in the Plan, to the conservation strategy as new information becomes available over time. The framework for the BDCP adaptive management program is set out in Section 3.6, *Adaptive Management and Monitoring Program*.

3. Monitoring

HCPs are required to include provisions for monitoring to gauge the effectiveness of the Plan in meeting the biological goals and objectives and to verify that the terms and conditions of the Plan are being properly implemented. The biological and compliance monitoring provisions of the BDCP are found in Section 3.6, *Adaptive Management and Monitoring Program*.

4. Permit Duration

Consistent with the five-point policy, USFWS and NMFS consider several factors in determining the term of an incidental take permit. The agencies, for instance, take into account the expected duration of the activities proposed for coverage and the anticipated positive and negative effects on covered species that will likely occur during the course of the Plan. The agencies also factor in the level of scientific and commercial data underlying the proposed operating conservation program, the length of time necessary to implement and achieve the benefits of the operating conservation program, and the extent to which the program incorporates adaptive management strategies. The duration of the permits to be issued pursuant to the BDCP is anticipated to be 50 years and is discussed below in Section 1.4.5, *Permit Duration*.

5. Public Participation

Under the five-point policy, USFWS and NMFS have sought to increase public participation in the HCP process, including greater opportunity for the public to assess, review, and analyze HCPs and associated NEPA documentation. As part of this effort, the agencies have encouraged greater engagement of the public for most HCPs, particularly those with regional scopes. As described in Section 1.6.1, *Public Participation*, the BDCP process afforded extensive opportunities for public involvement and input throughout the development of the Plan.

1.3.3 Natural Community Conservation Planning Act

The NCCPA provides a mechanism for compliance with state endangered species regulatory requirements through the development of comprehensive, broad-scale conservation plans that focus on the needs of natural communities and the range of species that inhabit them (Fish & Game Code 2800 *et seq.*) The NCCP program has provided the basis for successful collaborations throughout California between state and federal agencies, local governments, community groups, and private interests that have resulted in long-term, habitat-based protections for regional biodiversity and related ecosystems. It has also proved to be an effective tool in achieving these protections while reducing conflicts between conservation goals and the reasonable use of natural resources and lands for economic development. The BDCP adopts the approaches set out in the NCCPA and incorporates those elements necessary to meet regulatory requirements of the act.

Specifically, the BDCP has been developed in a manner consistent with the process identified in its Planning Agreement, including processes to ensure ample public participation and engagement throughout Plan development and review, extensive input from independent scientists, and coordination with federal fish and wildlife agencies with respect to ESA requirements. Consistent with the requirements of the NCCPA, the Plan further provides a multifaceted approach to provide for the conservation and management of covered species and their habitats, incorporating a conservation strategy that provides for the protection of habitat, natural communities, and species diversity on an ecosystem level; establishes conservation measures, including measures sufficient to fully mitigate the effects of covered activities; integrates adaptive management strategies that can be

modified based on new information developed through monitoring; and sets out a detailed implementation program, including provisions that ensure adequate funding to carry out the Plan.

The BDCP addresses all of the requirements of the NCCPA for aquatic, wetland, and terrestrial covered species of fish, wildlife, and plants and Delta natural communities affected by BDCP actions. On that basis, DFG may issue permits for the taking of the species proposed for coverage under the Plan (Fish & Game Code 2835). Such permits issued pursuant to an NCCPA may include authorization for the take of state-designated fully protected species.

1.3.4 California Endangered Species Act

The CESA prohibits the take of wildlife or plant species designated as threatened or endangered by the California Fish and Game Commission (Fish & Game Code 2080). *Take* under CESA is defined as any action or attempt “to hunt, pursue, catch, capture, or kill” (Fish & Game Code 86). Like the ESA, the CESA allows for exceptions to the take prohibitions for otherwise lawful activities. The requirements of an application for incidental take under the CESA are described in Section 2081 of the Fish & Game Code. Incidental take of endangered, threatened, or candidate species may be authorized if an applicant demonstrates, among other things, that the effects of the proposed take will be minimized and fully mitigated (Fish & Game Code 2081(b)(2)).

Although the BDCP has been designed to comply with the NCCPA, and take authorizations are being sought under Section 2835 of the Fish & Game Code, the Plan’s provisions have also been developed to be consistent with the regulatory standards of the CESA. Specifically, the BDCP conservation strategy incorporates measures that adequately minimize and fully mitigate the effects of covered activities on state-listed species and includes other such measures as required by the CESA. As such, the actions set out in the BDCP are expected to be sufficient to allow for findings to be made by DFG to support the issuance of incidental take authorizations under the CESA.

1.3.5 National Environmental Policy Act

The purpose of NEPA is to ensure that federal agencies consider the environmental impacts of their actions and decisions prior to approving the action (42 USC 4371 *et seq.*). NEPA requires that the federal government use all practicable means and measures to protect environmental values and makes environmental protection a part of the mandate of every federal agency and department. To accomplish this goal, NEPA establishes a process and approach to analysis to determine the environmental impacts associated with proposed federal discretionary actions that significantly affect the quality of the human environment.

The permitting and implementation of the BDCP involves several federal actions and decisions that are subject to the requirements of NEPA. Reclamation’s proposed actions could include coordinating SWP operations with new conveyance facilities, the federally related actions included in Chapter 4, *Covered Activities and Associated Federal Actions*, an expected agreement with DWR to provide for wheeling of CVP water through a new conveyance facility, and the implementation of certain conservation measures through the BDCP Implementation Office. USFWS and NMFS will make decisions regarding the issuance of incidental take permits under Section 10(a)(1)(B) of the ESA. For BDCP NEPA compliance, Reclamation, USFWS, and NMFS are co-lead agencies for the preparation of the BDCP environmental impact statement (EIS), which is being prepared jointly with DWR’s environmental impact report (EIR) in compliance with CEQA. The U.S. Army Corps of

Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) are participating in the NEPA process as cooperating federal agencies.

1.3.6 California Environmental Quality Act

CEQA serves as the State counterpart to NEPA, and applies to all discretionary activities proposed to be carried out or approved by California public agencies. CEQA requires state and local agencies to identify potential significant environmental impacts of their actions and to take all feasible steps to avoid or mitigate those impacts. CEQA sets forth both procedural and substantive requirements and its procedures are intended to ensure adequate public participation and input into the decision-making process (California Public Resources Code Section 21000 *et seq.* and CEQA Guidelines 14, California Code of Regulations [CCR] 15000 *et seq.*).

The BDCP is a project subject to CEQA, as are numerous BDCP-related actions that will be implemented over the term of the Plan. DWR serves as the CEQA lead agency for the preparation of the EIR, which will include analyses of DWR's proposed adoption of the Plan, as well as its implementation of certain projects covered by the BDCP. Among the BDCP-related projects that will undergo review are the construction of new conveyance facilities and several identifiable habitat restoration actions. The water contractors participating in this Plan also serve as a responsible agency under CEQA, and intend to use the EIR as responsible agencies to support their discretionary actions related to the BDCP. DFG is participating in the preparation of the EIR as both a responsible and trustee agency. The EIR will also serve as the CEQA document for the purpose of regulatory permits issued by DFG pursuant to the BDCP. The EIR is being prepared jointly with the EIS.

1.3.7 Relationship to Existing Biological Opinions

The operations of the SWP and CVP are currently subject to the terms and conditions of BiOps issued by USFWS and NMFS pursuant to Section 7 of the federal ESA. These BiOps, as modified under recent court order, are expected to be in effect until the new isolated water conveyance infrastructure identified in the Plan becomes operational. At that time, an integrated BiOp on coordinated long-term operation of the CVP and SWP will be completed by USFWS and NMFS/ this BiOp incorporates the BDCP conservation strategy as part of Reclamation's proposed action.

1.3.8 Relationship to Other Federal and State Laws and Regulations

The BDCP has been developed as a conservation plan that complies with state and federal endangered species laws. However, the Plan and the actions described herein will need to conform to the requirements of various other state and federal laws and regulations not specifically addressed by the Plan. Prior to the implementation of many of the conservation actions set out in the BDCP, regulatory authorizations and approvals will need to be obtained from state and federal authorities under applicable laws. Such authorizations will likely involve some or all of the following statutes.

- Section 404 of the Clean Water Act (placement of dredge and fill).
- Section 401 of the Clean Water Act (water quality certification).
- Section 10 of the Rivers and Harbors Act (navigation).

- Section 408 of the Rivers and Harbors Act (work on levees).
- California Fish and Game Code Sections 1600 *et seq.* and 5900 *et seq.* (channel modification, fish screens).
- Migratory Bird Treaty Act (migratory birds).
- Fish and Wildlife Coordination Act (modification of a water body).
- California Water Code Sections 1000 *et seq.* (water rights).
- Porter-Cologne Water Quality Control Act.

1.3.8.1 Section 404 of the Clean Water Act

In 1972, Congress passed the federal Water Pollution Control Act, commonly known as the Clean Water Act (CWA), with the goal of “restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation’s waters” (33 USC 1251(a)). In furtherance of this goal, the CWA prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under certain sections of the CWA (33 USC 1311, 1342, and 1344). Specifically, Section 404 authorizes USACE to issue permits for and regulate the discharge of dredged or fill materials into wetlands or other waters of the United States. Under the CWA and its implementing regulations, *waters of the United States* are broadly defined to consist of rivers, creeks, streams, and lakes extending to their headwaters, including adjacent wetlands(33 CFR 328.3(a)(3)).

Responsibility for the implementation of Section 404 of the CWA is shared by EPA and USACE. EPA is generally responsible for establishing policy and guidance regarding the implementation of the program. For instance, EPA developed the guidelines that are used to evaluate the sufficiency of Section 404 permit applications, and has played the lead role in determining the scope of the federal government’s jurisdiction over aquatic resources, including the reach of the term *waters of the United States*. EPA also determines the eligibility of a state to assume responsibility for portions of the Section 404 program.⁴ On the other hand, USACE is responsible for the day-to-day administration of the Section 404 permit program.

Many of the actions that will be implemented under the BDCP will result in the discharge of dredged or fill materials into waters of the United States and will need to be authorized by USACE. These BDCP actions will receive such authorizations through both general permits and individual permits. Typically, general permits apply to specific classes of activities that have been determined to cause no more than minimal adverse effects on the aquatic environment (e.g., construction of road crossings, installation of utility lines, and operations and maintenance activities) (33 CFR 325.5(c)). Individual permits are designed for activities that have the potential to have more than a minimal effect on jurisdictional waters or that otherwise do not qualify under the conditions of a general permit. Substantively, USACE must evaluate applications for individual permits to determine their consistency with the requirements of the Section 404(b)(1) Guidelines (40 CFR 230) and USACE regulations (33 CFR 325).

⁴ The 1977 amendments to the CWA provided that states can assume the federal 404 program provided that the state has a “comparable” program. State program assumption of 404 is only available for nonnavigable waters so that even in states where the program has been assumed, the federal government retains control over activities in navigable waters. Only two states, Michigan and New Jersey, have assumed the 404 program to date. In states with assumed 404 programs, the state authorization is the only one required.

1.3.8.2 Section 401 of the Clean Water Act

Pursuant to Section 401, states can certify or deny federal permits or licenses that might result in a discharge to state waters, including wetlands (33 USC 1341). Section 404 permit applicants must obtain a “water quality certification” from the state water quality agency indicating that the proposed activity complies with all applicable state water quality standards, limitations, and restrictions. In California, the Regional Water Quality Control Boards (RWQCBs) issue water quality certifications within their jurisdictions. Appeals to the decisions of the RWQCBs are heard by the State Water Resources Control Board (State Water Board).

1.3.8.3 Section 10 of the Rivers and Harbors Act

Certain BDCP actions will require authorizations under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403), which requires authorization from the Secretary of the Army for the construction of any structure in or over any navigable water of the United States or the construction of structures or alteration of capacity in any port, canal, navigable river, or other water of the United States (33 CFR 401 *et seq.*). *Navigable waters* under Section 10 of the Rivers and Harbors Act are defined as “those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce” (33 CFR 329.4).

1.3.8.4 Section 14 of the Rivers and Harbors Act (Section 408)

Section 14 of the Rivers and Harbors Act of 1899 (33 USC 408; commonly referred to as Section 408) provides protection for federal projects in waterways such as sea walls, dikes, levees, and piers from being moved, altered, or destroyed, in a manner that impairs the usefulness of the structure. Under Section 408, the Chief of Engineers may grant permission to alter an existing federal project if it is not injurious to the public interest and does not impair the usefulness of the project. Certain BDCP actions, such as those that affect federal project levees and weirs, will require authorizations under Section 408.

1.3.8.5 California Fish and Game Code Section 1600 *et seq.*

California has adopted regulations to address impacts to many of the resources subject to Section 404 of the CWA. Although not entirely overlapping, these programs intersect frequently. Project proponents are required to obtain separate authorizations from USACE and DFG.

Section 1602 of the Fish & Game Code requires any person, state, or local government agency to provide advance written notification to DFG prior to initiating any activity that would cause the following actions.

- Divert or obstruct the natural flow of, or substantially change or remove material from the bed, channel, or bank of any river, stream, or lake.
- Result in the disposal or deposition of debris, waste, or other material into any river, stream, or lake (Fish & Game Code 1602).

The state definition of *lake, rivers, and streams* includes all rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic

life, and watercourses with surface or subsurface flows that support or have supported riparian vegetation (14 CCR 1.72.).

Certain actions that will be implemented under the BDCP will require a Lake and Streambed Alteration Agreement under Section 1602. As part of that process, DFG will review notifications of actions implemented under the BDCP to determine if the proposed project would substantially adversely affect existing fish and wildlife resources that are directly dependent on a lake, river, or stream. If DFG determines that the proposed activity would not substantially adversely affect an existing fish and wildlife resource, it will notify the Implementation Office that no Lake and Streambed Alteration Agreement is required and the project may proceed (Fish & Game Code 1602(a)(4)(A)(i)). If DFG determines that the project may substantially adversely affect an existing fish and wildlife resource, it will require, as part of a Lake and Streambed Alteration Agreement, reasonable measures necessary to protect the fish and wildlife resource (Fish & Game Code 1603(a)).

1.3.8.6 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 implements four international treaties for the conservation and management of bird species that may migrate through more than one country (16 USC 703 *et seq.*). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). For federally listed migratory bird species covered under the BDCP for which an ESA Section 10(a) permit has been issued, the Implementation Office may also obtain an MBTA permit for those species.

1.3.8.7 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act of 1936 provides a basic procedural framework for the orderly consideration of fish and wildlife conservation and enhancement measures in federally constructed, permitted, or licensed water development projects (16 USC 661–667e *et seq.*). The act provides that, whenever any water body is proposed to be controlled or modified “for any purpose whatever” by a federal agency or by any public or private agency under a federal permit or license, the action agency is required first to consult with the wildlife agencies, “with a view to the conservation of fish and wildlife resources in connection with that project.” The act authorizes preparation of reports and recommendations by the Secretary of the Interior (and/or Commerce) and the head of the state agency responsible for the administration of fish and wildlife resources, to be submitted to the action agency. That report, if prepared, must be made available to the Congress or other authorizing agents when decisions are made to authorize (or not to authorize, or authorize with modifications) a project. Other provisions of the act relate to the acquisition and use of project lands and waters for fish and wildlife purposes, the evaluation of project effects including benefits and costs, and related matters. The BDCP will support the Fish and Wildlife Coordination Act consultation between Reclamation and USFWS and NMFS.

1.3.8.8 Water Rights under the California Water Code

The California Water Code (Division 2, Section 1000 *et seq.*) prescribes detailed procedures that govern the appropriation of water from a lake, river, stream, or creek. After the enactment of the State Water Commission Act in 1914, the state required any person or agency seeking to use surface

water, without an existing riparian right, to apply for and receive approval for such use from the State Water Board. Water rights permits granted by the State Water Board include detailed descriptions of the amounts, conditions, and construction timetables under which the proposed water project must comply. Prior to permit issuance, the State Water Board must take into account all prior rights and the availability of water in the basin. The State Water Board must also consider the flows needed to preserve instream uses such as recreation and fish and wildlife habitat. The State Water Board may impose additional conditions to ensure that these criteria are satisfied and it may use its continuing authority to enforce and revise the conditions of water right permits over time. The State Water Board is also empowered to revoke a permit or issue cease and desist orders if conditions of the permit are not being met.

The implementation of the BDCP will require a change in points of diversion specified in the DWR and Reclamation water right permits. As such, DWR and Reclamation will need to petition the State Water Board to change the point of diversion. Prior to approving these petitions, the State Water Board must find that the change will not cause injury to any legal user of the water involved or result in harm fish or wildlife. Other water right holders and the public will have an opportunity to object to the proposed change by filing a protest form with the State Water Board. If a protest is filed, the State Water Board must hold a hearing on the petition and will either grant or refuse permission to make the change. Because the State Water Board has discretion to approve the requested petition, it must comply with CEQA.

1.3.8.9 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) (California Water Code 13000 *et seq.*) sets out a comprehensive regulatory, planning, and management program to protect water quality and beneficial uses of the state's water. The act established the State Water Board's authority to preserve and enhance the quality of California's water resources, and to ensure proper allocation and efficient use of water.

Under Porter-Cologne, the State Water Board is required to prepare a water quality control plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan). While the RWQCBs have primary responsibility for formulating and adopting water quality control plans for their respective regions, the State Water Board also is authorized to develop and adopt water quality control plans. In such instances, the water quality control plan adopted by the State Water Board supersedes regional plans developed for the same waters, to the extent that they conflict.

The Bay-Delta Plan consists of three primary components.

- The beneficial uses (of water) to be protected.
- The water quality objectives for the estuary.
- The implementation programs to meet the water quality objectives.

Beneficial uses include uses such as domestic, agricultural, and industrial supply; power generation; recreation and aesthetic use; navigation; and preservation and enhancement of fish, aquatic, and wildlife resources. Water quality objectives or standards reflect the levels of water quality constituents that have been determined to be necessary to protect beneficial uses. Implementation plans describe actions to be taken to achieve the objectives and set out programs for monitoring, management, and enforcement.

The State Water Board is vested with primary regulatory authority over flows, water quality, and other water rights issues outlined in the Bay-Delta Plan. As such, many of the actions described in the BDCP, including modifications to the water conveyance system, will require the approval of the State Water Board. The State Water Board's participation in the development of the BDCP and in the environmental review process is intended to ensure consistency between the actions described in the BDCP and those required by the State Water Board as part of its water quality control planning and implementation activities.

1.4 Scope

This section describes the geographic scope of the BDCP, the natural communities and species covered by the Plan, the types of activities that the Plan covers, and the duration sought for regulatory permits that are issued by the fish and wildlife agencies pursuant to the Plan.

1.4.1 Geographic Scope of the Plan Area

The geographic scope of the Plan Area encompasses the Sacramento-San Joaquin Delta and additional areas in which conservation measures may be implemented pursuant to the Plan. Take authorizations issued under the BDCP will extend to covered activities that occur within the Plan Area.

The BDCP conservation strategy is primarily focused on the statutory Delta, as defined in California Water Code Section 12220. However, certain areas outside the statutory Delta contain desirable locations for conservation actions that advance the goals and objectives of the Plan (Figure 1-1).⁵ Suisun Marsh, Suisun Bay, and the upper Yolo Bypass have been included in the Plan Area to provide important sites for habitat restoration that directly supports goals and objectives for natural communities and covered species (Figure 1-1). In addition, the conservation strategy includes measures that will be implemented outside of the statutory Delta to support or complement regional conservation planning efforts underway in Yolo, Solano, Contra Costa, San Joaquin, and Sacramento Counties (Section 1.5, *Relationship to Other Plans in the Delta*). As such, the geographic scope of the Plan Area will also encompass habitat lands that are conserved through BDCP actions taken in conjunction with these other regional conservation programs. To the extent appropriate, these conservation actions will be implemented through cooperative agreements, or similar mechanisms with local agencies, interested nongovernment organizations, landowners, or other parties.

To accommodate the range of conservation measures necessary to meet the goals and objectives of the BDCP, the scope of the Plan Area may need to be expanded during the implementation of the Plan. The flexibility to expand the boundaries of the Plan during plan implementation will allow for greater opportunity to maximize conservation benefits associated with the measures set out in the conservation strategy. Adjustments to the Plan Area would likely require an amendment to the Plan as described in Chapter 6, *Plan Implementation*.

⁵ The BDCP Planning Agreement recognized the likelihood that the BDCP conservation strategy would include actions that would be implemented outside of the statutory Delta to further advance the goals and objectives of the Plan.

Because the SWP and CVP water infrastructure is operated as an integrated system, the effects of implementing the BDCP will extend in aquatic systems beyond the Delta, both upstream and downstream, and will implicate water operations parameters as well as species and their habitats. Therefore, the BDCP effects analysis (Chapter 5, *Effects Analysis*) takes into account these upstream and downstream aquatic effects, both positive and negative, to ensure that the overall effects of the BDCP are sufficiently described, analyzed, and addressed. Areas potentially affected by the implementation of the BDCP located outside of the geographic scope of the Plan, have been included in the analysis of effects to ensure that all of the potential effects within the *action area* (all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action), as defined by Section 7 of the ESA, have been adequately assessed.

1.4.2 Natural Communities

Natural communities are distinct and reoccurring assemblages of plants and animals associated with specific physical environmental conditions and ecological processes. A natural community occurs across a landscape where similar ecological conditions exist. The Wildlife and Natural Areas Conservation Act defines natural community as “a distinct, identifiable, and recurring association of plants and animals that are ecological interrelated” (Fish & Game Code 2702[d]). Individual species occur within the context of natural communities and it is within these communities that species interact with other species and the physical environment. The NCCPA states that the purpose of natural community conservation planning is “to sustain and restore those species and their habitat ...that are necessary to maintain the continued viability of those biological communities impacted by human changes to the landscape” (Fish & Game Code 2801(h)(i)).

To adequately address the natural communities in the Delta that support covered species and native biodiversity, the BDCP includes measures that sustain and enhance ecological processes and provide for the protection and restoration of a broad range of natural communities. Conservation measures have been designed to improve ecological functions and restore species habitat in the following natural communities, each of which is defined and described in Chapter 2, *Existing Conditions*.

- Tidal perennial aquatic
- Tidal mudflat
- Tidal brackish emergent wetland
- Tidal freshwater emergent wetland
- Valley/foothill riparian
- Nontidal perennial aquatic
- Nontidal freshwater perennial emergent wetland
- Alkali seasonal wetland complex
- Vernal pool complex
- Managed wetland
- Other natural seasonal wetland
- Grassland

• Inland dune scrub

Although not considered a natural community, cultivated lands are nonetheless taken into account in the BDCP conservation strategy because, in certain instances, they provide value as habitat for covered species. Cultivated lands addressed by the BDCP have been divided into subtypes, each of which provides varying benefits to different covered species or groups of covered species. These cultivated cropland subtypes are as follows.

- Alfalfa
- Irrigated pasture
- Rice
- Other cultivated crops
- Orchards
- Vineyards

Collectively, the covered natural communities encompass the habitat used by covered species within the Plan Area.

1.4.3 Covered Species

The ESA and the NCCPA set forth specific criteria that must be satisfied to support the issuance of regulatory authorizations that provide for the incidental take of species. The term *covered species* refers to those species for which incidental take authorizations may be issued under the BDCP pursuant to state and federal endangered species laws. The proposed BDCP covered species are identified in Table 1-2.

The BDCP seeks regulatory coverage for those species that will potentially be adversely affected by those activities covered by the Plan. As such, the list of species proposed for coverage is limited to those species currently protected under state or federal wildlife laws, and those species that are likely to receive the protection of those laws in the future. The list of covered species is not intended to include all species that occur in the Plan Area or all species and habitats that will directly or indirectly be affected by implementation of the BDCP. Rather, the covered species list reflects the range of species for which regulatory authorizations are needed under state and/or federal law for any take associated with the activities covered by the BDCP. Many species not covered under the BDCP will benefit from the measures that provide for the conservation of natural communities that encompass both common and rare species.

1.4.3.1 Species Evaluated for Coverage

The species evaluated for potential coverage under the BDCP include a broad range of fish, wildlife, and plant species that are likely to occur within the geographic scope of the Plan and are currently considered to be rare, sensitive, threatened or imperiled, or likely to be so in the future (Appendix 1.A, *Evaluation of Species Considered for Coverage*). Many of the species on the list have been granted protected or special status, including those that have been listed under the ESA or CESA or other laws or regulations. This list further included species that have been recognized by the scientific community as warranting concern due to their rarity or ecological importance. Among the species included on the list are those with the following special status.

- 1 • Listed as threatened or endangered under the ESA.
- 2 • Proposed or candidates for listing under the ESA.
- 3 • Listed as threatened or endangered under the CESA.
- 4 • Candidates for listing under the CESA.
- 5 • California species of special concern identified by DFG.
- 6 • California fully protected species under Fish & Game Code Sections 3511 (birds), 4700
- 7 (mammals), 5050 (reptiles and amphibians), and 5515 (fish).
- 8 • USFWS birds of conservation concern.
- 9 • NMFS species of concern.
- 10 • Plants listed as rare under the California Native Plant Protection Act (NPPA).
- 11 • Plants included in the California Native Plant Society (CNPS) List 1A, 1B, or 2.

12 **1.4.3.2 Evaluation and Selection Criteria**

13 The evaluation process relied primarily on four criteria to determine which special-status species
 14 would be included on the list of species proposed for coverage under the BDCP. The selection
 15 criteria, which are discussed in detail in Appendix 1.A, *Evaluation of Species Considered for Coverage*,
 16 are as follows.

- 17 • Listing status of the species, including whether the species is likely to become listed during the
- 18 proposed permit duration.
- 19 • Likelihood that the species is present in the Plan Area or other areas within the geographic
- 20 scope.
- 21 • Potential for the species to be adversely affected by BDCP covered activities, including the
- 22 implementation of conservation measures.
- 23 • Level of information available to determine potential impacts to species and to identify effective
- 24 conservation measures.

25 Those species that met all four of these criteria are proposed for coverage under the BDCP (Table 1-
 26 2). The results of the evaluations conducted for each species are set out in Appendix 1.A, *Evaluation*
 27 *of Species Considered for Coverage*.

1 **Table 1-2. BDCP Covered Species**

No.	Common Name	Scientific Name	Status (Federal/State/CNPS) ¹
Fish (11 species)			
1	delta smelt	<i>Hypomesus transpacificus</i>	T/T/-
2	longfin smelt	<i>Spirinchus thaleichthys</i>	-/T/-
3	Chinook salmon, Sacramento River winter-run ESU	<i>Oncorhynchus tshawytscha</i>	E/E/-
4	Chinook salmon, Central Valley spring-run ESU	<i>Oncorhynchus tshawytscha</i>	T/T/-
5	Chinook salmon, Central Valley fall- and late fall-run ESU	<i>Oncorhynchus tshawytscha</i>	-/SSC/-
6	steelhead, Central Valley DPS	<i>Oncorhynchus mykiss</i>	T/-/-
7	Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	-/SSC/-
8	green sturgeon, southern DPS	<i>Acipenser medirostris</i>	T/SSC/-
9	white sturgeon	<i>Acipenser transmontanus</i>	-/-/-
10	Pacific lamprey	<i>Entosphenus tridentatus</i>	-/-/-
11	river lamprey	<i>Lampetra ayresii</i>	-/-/-
Mammals (6 species)			
12	riparian brush rabbit	<i>Sylvilagus bachmani riparius</i>	E/E/-
13	riparian woodrat (San Joaquin Valley)	<i>Neotoma fuscipes riparia</i>	E/SSC/-
14	salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>	E/E,FP/-
15	San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E/T/-
16	Suisun shrew	<i>Sorex ornatus sinuosus</i>	-/SSC/-
17	Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	-/SSC/-
Birds (12 species)			
18	California black rail	<i>Laterallus jamaicensis coturniculus</i>	-/T,FP/-
19	California clapper rail	<i>Rallus longirostris obsoletus</i>	E/E,FP/-
20	California least tern	<i>Sternula antillarum browni</i>	E/E/-
21	greater sandhill crane	<i>Grus canadensis tabida</i>	-/T,FP/-
22	least Bell's vireo	<i>Vireo bellii pusillus</i>	E/E/-
23	Suisun song sparrow	<i>Melospiza melodia maxillaris</i>	-/SSC/-
24	Swainson's hawk	<i>Buteo swainsoni</i>	-/T/-
25	tricolored blackbird	<i>Agelaius tricolor</i>	-/SSC/-
26	western burrowing owl	<i>Athene cunicularia hypugaea</i>	-/SSC/-
27	western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	C/E/-
28	white-tailed kite	<i>Elanus leucurus</i>	-/FP/-
29	yellow-breasted chat	<i>Icteria virens</i>	-/SSC/-
Reptiles (2 species)			
30	giant garter snake	<i>Thamnophis gigas</i>	T/T/-
31	western pond turtle	<i>Actinemys marmorata</i>	-/SSC/-
Amphibians (3 species)			
32	California red-legged frog	<i>Rana draytonii</i>	T/SSC/-

No.	Common Name	Scientific Name	Status (Federal/State/CNPS) ¹
33	California tiger salamander (Central Valley DPS)	<i>Ambystoma californiense</i>	T/T/-
34	western spadefoot	<i>Spea hammondi</i>	-/SSC/-
Invertebrates (7 species)			
35	California linderiella	<i>Linderiella occidentalis</i>	-/-/-
36	conservancy fairy shrimp	<i>Branchinecta conservatio</i>	E/-/-
37	longhorn fairy shrimp	<i>Branchinecta longiantenna</i>	E/-/-
38	midvalley fairy shrimp	<i>Branchinecta mesoavallensis</i>	-/-/-
39	valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T/-/-
40	vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T/-/-
41	vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	E/-/-
Plants (19 species)			
42	alkali milk-vetch	<i>Astragalus tener</i> var. <i>tener</i>	-/-/1B
43	Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	-/E/1B
44	brittlescale	<i>Atriplex depressa</i>	-/-/1B
45	caper-fruited tropidocarpum	<i>Tropidocarpum capparideum</i>	-/-/1B
46	Carquinez goldenbush	<i>Isocoma arguta</i>	-/-/1B
47	delta button celery	<i>Eryngium racemosum</i>	-/E/1B
48	delta mudwort	<i>Limosella subulata</i>	-/-/2
49	Delta tule pea	<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	-/-/1B
50	dwarf downingia	<i>Downingia pusilla</i>	-/-/2
51	heartscale	<i>Atriplex cordulata</i>	-/-/1B
52	Heckard's peppergrass	<i>Lepidium latipes</i> var. <i>heckardii</i>	-/-/1B
53	legenere	<i>Legenere limosa</i>	-/-/1B
54	Mason's lilaeopsis	<i>Lilaeopsis masonii</i>	-/R/1B
55	San Joaquin spearscale	<i>Atriplex joaquiniana</i>	-/-/1B
56	side-flowering skullcap	<i>Scutellaria lateriflora</i>	-/-/2
57	slough thistle	<i>Cirsium crassicaule</i>	-/-/1B
58	soft bird's-beak	<i>Cordylanthus mollis</i> ssp. <i>mollis</i>	E/R/1B
59	Suisun Marsh aster	<i>Symphyotrichum lentum</i>	-/-/1B
60	Suisun thistle	<i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>	E/-/1B
<p>Status:</p> <p>Federal</p> <p>E = Listed as endangered under the ESA T = Listed as threatened under the ESA C = Candidate for listing under the ESA ESU = Evolutionary Significant Unit</p> <p>State</p> <p>E = Listed as endangered under the CESA T = Listed as threatened under CESA R = Listed as rare under the California Native Plant Protection Act SSC = California species of special concern FP = Fully protected under the California Fish and Game Code</p> <p>California Native Plant Society (CNPS)</p> <p>1B = rare or endangered in California and elsewhere 2 = rare and endangered in California, more common elsewhere</p>			

1.4.4 Covered Activities and Associated Federal Actions

The BDCP is intended to provide the basis for the issuance of regulatory authorizations under the ESA and the NCCPA for a broad range of ongoing and anticipated activities in the Plan Area that are associated with the operations of the SWP and CVP. Covered activities and associated federal actions encompass all actions that are proposed for coverage under take authorizations that are expected to be issued by the state and/or federal fish and wildlife agencies on the basis of the BDCP.

These actions have been designated as either *covered activities*, which encompass those actions that will be undertaken by nonfederal parties, or *associated federal actions*, which refer to those actions that are authorized, funded, or carried out by Reclamation. The BDCP covered activities and associated federal actions are described in Chapter 4, *Covered Activities and Associated Federal Actions*.

1.4.4.1 Covered Activities

The BDCP covered activities consist primarily of activities related to the development and operation of water conveyance infrastructure associated with the SWP that will occur within the Plan Area. Specifically, those SWP-related actions covered by the BDCP involve the following actions.

- The operation of existing and future Delta facilities to transport and deliver water for SWP purposes.
- The maintenance and monitoring of water infrastructure and other facilities.

The BDCP covered activities also include the conservation measures (Chapter 3, *Conservation Strategy*). These actions are covered by the BDCP because they may potentially affect species protected under state and federal endangered species laws. Such conservation actions include the restoration of aquatic and terrestrial habitats, construction of new water infrastructure and other facilities, monitoring of covered species, and research and study of species and habitats.

1.4.4.2 Associated Federal Actions

The BDCP associated federal actions comprise those activities that are authorized, funded, or carried out by Reclamation within the Plan Area and relate to the operation of the CVP's Delta facilities. These include the operation of existing CVP Delta facilities to convey and export water to meet project purposes and associated maintenance and monitoring activities. While the SWP and CVP are separate systems, the projects function in an integrated and coordinated manner pursuant to the Coordinated Operations Agreement. As such, Reclamation and/or the CVP water contractors will use a portion of the conveyance capacity of the new water conveyance facility.

1.4.5 Permit Duration

DWR is seeking take permits from the state and federal fish and wildlife agencies that remain in effect for a term of 50 years. The proposed 50-year permit duration is necessary to allow sufficient time for the proper implementation of the actions set out in the Plan and to realize the overall BDCP goals of water supply reliability and ecosystem restoration, which will yield an extended period of time.

Many of the key elements of the BDCP, including the development of substantial new water conveyance infrastructure, restoration of tidal and estuarine habitats, restoration of seasonal floodplain habitat, and establishment and maturation of riparian forest habitat, will require substantial funding to implement. Such funding is expected to occur over an extended period of time (see Chapter 6, *Plan Implementation*, for the schedule of implementation actions). The duration of the permits must be sufficient to justify such expenditures of funds, allow for proper sequencing and effective implementation of the actions contemplated by the Plan, and afford regulatory stability with respect to the operation of the primary water delivery systems for the State of California. The proposed permit duration is also necessary to allow sufficient time to secure the funding required for Plan implementation. As described in Chapter 8, *Implementation Costs and Funding Sources*, for instance, an endowment will need to be built over time to a level sufficient to generate funding to support management and monitoring activities in perpetuity.

The proposed duration of the permits is also necessary to accommodate the proper and systematic assembly and management of the reserve system. The acquisition of land at levels contemplated by the BDCP will require several decades to complete. A single transaction, for instance, may take several years to finalize; to assemble the BDCP reserve system, several hundred such transactions will likely be required. In addition, a permit duration of 50 years will also allow the monitoring and adaptive management programs to become well-established and viable in perpetuity. In summary, a permit duration of 50 years provides a practicable time frame in which to carry out the activities that will be authorized under the Plan, including adaptive management strategies, and maximize the benefits of these activities to species and their habitats.

1.5 Relationship to Other Plans in the Delta

This section describes the relationship of the BDCP to other related conservation plans in the Delta, including the Delta Plan. The BDCP Plan Area adjoins or overlaps with six other regional conservation plans that are in implementation or development (Figure 1-2). Four are HCPs, of which two are also NCCPs, and two address conservation priorities in other ways. The following sections summarize these plans. Figure 1-2 also shows three other plans that do not overlap the BDCP Plan Area but are adjacent to the Plan Area; these are the Natomas Basin HCP (currently being implemented), the Placer County Conservation Plan (currently in development), and the Yuba-Sutter HCP/NCCP (currently in development).

1.5.1 The Delta Plan

In November 2009, over three years after BDCP planning began, the State of California enacted comprehensive legislation to address the range of challenges facing the Delta, including those involving water supply reliability and ecosystem health. Although the Delta Plan was enacted following an extended period of BDCP development, the BDCP is included in the Delta Plan. The legislation enacting the Delta Plan advances several broad goals of the state with regard to the Delta and specifies a range of actions to be implemented to meet those goals. Among the several goals stated in the legislation is the following:

Achieve the two co-equal goals of providing for a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The co-equal goals shall be achieved in a

manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.

The codification of these coequal goals has served to reinforce the similar BDCP planning goals that were used throughout the planning process to help guide the development of the Plan (Section 1.2, *Planning Goals and Conservation Objectives*).

The Delta legislation includes the Sacramento-San Joaquin Delta Reform Act of 2009 (California Water Code 35), which provides for the establishment of an independent state agency, the Delta Stewardship Council (Council), to further the coequal goals of ecosystem restoration and a reliable water supply. The Council, which became operational on February 3, 2010, is charged with the development and implementation of the comprehensive Delta Plan, and is vested with the authority to review actions of state and local agencies and advise on their consistency with the Delta Plan.

The Council is also required to consider the inclusion of the BDCP in the Delta Plan. The Sacramento-San Joaquin Delta Reform Act sets out the conditions under which the Council is to incorporate the BDCP into the Delta Plan. To be considered for inclusion in the Delta Plan, the BDCP must comply with the requirements of the NCCPA and CEQA, which includes a review and analysis of alternatives to the proposed Plan. Upon approval of the BDCP as an NCCP and as an HCP under the ESA, the Council is required to incorporate the BDCP into the Delta Plan. However, the determination by the California Department of Fish and Game (DFG) that the BDCP meets the requirements of the NCCPA may be appealed to the Council.

1.5.2 East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan

The East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan was adopted in 2006 by Contra Costa County; the Cities of Brentwood, Clayton, Pittsburg, and Oakley; and the East Contra Costa County Habitat Conservancy, which now implements the Plan with the East Bay Regional Park District. Permits were issued in 2007 and plan implementation began in January 2008 for the 30-year permit term. The HCP/NCCP provides regional conservation and development guidelines to protect natural resources while improving and streamlining the permit process for endangered species and wetland regulations. Within the 174,018-acre inventory area, the HCP/NCCP provides permits for between 8,670 and 11,853 acres of development and will permit impacts on an additional 1,126 acres from rural infrastructure projects. The HCP/NCCP will encompass a preserve system covering 23,800 to 30,300 acres of land that will be managed for the benefit of 28 species and the natural communities that they depend upon.

The BDCP Plan Area overlaps the East Contra Costa County HCP/NCCP in the central western portion of the Plan Area (Figure 1-2). Both plans also have 15 covered species in common, including San Joaquin kit fox, western burrowing owl, and Swainson's hawk (Table 1-3).

1.5.3 San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (San Joaquin County HCP) was permitted in 2000 and administered by the San Joaquin Council of Governments. This 50-year plan addresses 97 special-status plant, fish and wildlife species in 52 vegetative

communities scattered throughout almost all of San Joaquin County (over 900,000 acres), which include a substantial fraction of the Sacramento-San Joaquin Delta. The plan participants are San Joaquin County and all seven cities in the county: Stockton, Lodi, Manteca, Tracy, Ripon, Escalon, and Lathrop. Activities covered under the plan include urban development, mining, expansion of existing urban boundaries, nonagricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing Preserves, and similar public agency projects.

The BDCP Plan Area overlaps a substantial portion of the San Joaquin County HCP, and this plan overlaps approximately half of the legal Delta (Figure 1-2). Both plans have 39 covered species in common, including San Joaquin kit fox, western burrowing owl, and Swainson's hawk (Table 1-3). The San Joaquin County HCP is currently seeking a plan amendment to add riparian brush rabbit, also a BDCP covered species.

1.5.4 South Sacramento Habitat Conservation Plan

The proposed South Sacramento HCP would address issues related to species conservation, agricultural protection, and urban development in 341,000 acres of south Sacramento County. The plan is being prepared by Sacramento County; the Cities of Sacramento, Elk Grove, Galt, and Rancho Cordova; Sacramento Regional County Sanitation District; and the Capital Southeast Connector Joint Powers Authority. The HCP would cover 40 species of plants and wildlife, including 10 that are state- or federally listed as threatened or endangered. The southwest corner of the South Sacramento HCP Plan Area overlaps the BDCP Plan Area (Figure 1-2) and 16 species are shared by the two plans (Table 1-3).

1.5.5 Yolo Natural Heritage Program

The Yolo County Habitat Joint Powers Authority, consisting of five local public agencies, launched the Yolo Natural Heritage Program, an HCP/NCCP, in March 2007. Member agencies include Yolo County and the Cities of Davis, Woodland, West Sacramento, and Winters. The HCP/NCCP will describe the measures that local agencies will implement in order to conserve biological resources, obtain permits for urban growth and public infrastructure projects, and continue to maintain the agricultural heritage and productivity of the county. The 653,820-acre planning area provides habitat for 28 sensitive species in five principal natural communities. Interim conservation activities include acquiring permanent conservation easements for sensitive species habitat in the plan area. The Yolo Natural Heritage Program overlaps the BDCP Plan Area in the Yolo Bypass area (Figure 1-2) and has 23 species in common with the BDCP (Table 1-3).

1.5.6 Solano Habitat Conservation Plan

The Solano County Water Agency is developing the Solano Habitat Conservation Plan to support the issuance of an incidental take permit under the federal ESA for a period of 30 years for the Solano Project Contract Renewal Biological Opinion between USFWS and Reclamation. Coverage is proposed for 37 species. The minimum geographical area to be covered is the Solano County Water Agency's contract service area, including the Cities of Fairfield, Vacaville, Vallejo, Suisun City, the

Solano Irrigation District, and the Maine Prairie Water District. The plan area also includes all of Solano County and a small portion of Yolo County. The HCP includes a coastal marsh natural community conservation strategy designed to maintain the water and sediment quality standards, hydrology, and ecological functions of this natural community; contribute to the restoration of tidally influenced coastal marsh habitat; contribute to the conservation and recovery of associated covered species; and promote habitat connectivity.

Primary conservation actions include preservation (primarily through avoidance), restoration, invasive species control, and improvement of water quality. The plan area covers 580,000 acres, which includes 12,000 acres of proposed development and 30,000 acres that will be preserved. The Solano HCP overlaps substantially with the BDCP Plan Area in Suisun Marsh and Cache Slough (Figure 1-2). The two plans share 26 covered species (Table 1-3), including Swainson's hawk, California clapper rail, and salt marsh harvest mouse.

1.5.7 East Alameda County Conservation Strategy

The East Alameda County Conservation Strategy was approved in early 2011 and is now being implemented. This plan is not an HCP or NCCP but is designed to provide a regional conservation blueprint for individual projects to utilize in their permitting process. Agencies that prepared the plan and have pledged to help implement it are Alameda County; the cities of Dublin, Livermore, and Pleasanton; Alameda County Waste Management Authority; and the Alameda County Congestion Management Agency. Partners in the plan included USFWS, DFG, and the San Francisco Regional Water Quality Control Board. USFWS is currently consulting with USACE to provide a programmatic Section 7 BiOp that could be used by project applicants within the plan area who need a CWA Section 404 permit.

The BDCP Plan Area overlaps with the East Alameda County Conservation Strategy in its northeastern corner (Figure 1-2). BDCP shares 31 covered species with the strategy (Table 1-3).

1.5.8 Suisun Marsh Habitat Management, Preservation, and Restoration Plan

The Suisun Marsh is the largest contiguous brackish water wetland in the western United States. It is an important wetland on the Pacific Flyway, providing food and habitat for migratory birds. The marsh also supports a wide variety of plants, fish, and wildlife that depend on this ecosystem for their survival. The Suisun Marsh is located in the Bay-Delta estuary, which also means that its water quality affects, and is affected by, California's two largest water supply systems, the SWP and the CVP, and other upstream diversions.

The Suisun Marsh Habitat Management, Preservation, and Restoration Plan is being implemented by the Suisun Principal Agencies⁶, a group of agencies with primary responsibility for Suisun Marsh management. The 30-year plan is intended to balance the benefits of tidal wetland restoration with other habitat uses in Suisun Marsh by achieving certain specific changes in marsh-wide land uses

⁶ The Suisun Principal Agencies include the U.S. Fish and Wildlife Service (USFWS), U.S. Department of the Interior, Bureau of Reclamation (Reclamation), California Department of Fish and Game (DFG), California Department of Natural Resources (DWR), National Marine Fisheries Service (NMFS), Suisun Resource Conservation District (SRCD), and CALFED Bay-Delta Program (CALFED).

1 affecting values such as salt marsh harvest mouse habitat, managed wetlands, public use, and upland
2 habitat. This involves implementing a broad array of activities covering ESA and CESA compliance,
3 managed wetland activities, restoration activities, and maintenance activities related to certain SWP
4 and CVP mitigation commitments. The central component of the plan is the restoration of 7,000
5 acres of tidal salt marsh.

ADMIN DRAFT

1 **Table 1-3. BDCP Proposed Covered Species and Species Covered by Overlapping Regional Conservation Plans, including HCPs and NCCPs**

No.	Common Name/ Scientific Name	East Contra Costa County HCP/ NCCP ¹	San Joaquin County MSHCP and Open Space Plan ¹	South Sacramento HCP ²	Yolo Natural Heritage Program ²	Solano HCP ²	East Alameda County Conservation Strategy ¹	Natomas Basin HCP ¹	Placer County Conservation Plan ²	Yuba-Sutter HCP/ NCCP ²
1	delta smelt <i>Hypomesus transpacificus</i>		X			X				
2	longfin smelt <i>Spirinchus thaleichthys</i>		X			X				
3	Chinook salmon, Sacramento River winter-run ESU <i>Oncorhynchus tshawytscha</i>					X				
4	Chinook salmon, Central Valley spring-run ESU <i>Oncorhynchus tshawytscha</i>					X				
5	Chinook salmon, Central Valley fall- and late fall-run ESU <i>Oncorhynchus tshawytscha</i>					X			X	
6	steelhead, Central Valley DPS <i>Oncorhynchus mykiss</i>					X	X		X	
7	Sacramento splittail <i>Pogonichthys macrolepidotus</i>		X			X				
8	green sturgeon, southern DPS <i>Acipenser medirostris</i>		X							
9	white sturgeon <i>Acipenser transmontanus</i>									
10	Pacific lamprey <i>Entosphenus tridentatus</i>									
11	river lamprey <i>Lampetra ayresii</i>									
12	riparian brush rabbit <i>Sylvilagus bachmani riparius</i>		X							
13	riparian woodrat (San Joaquin Valley) <i>Neotoma fuscipes riparia</i>		X							
14	salt marsh harvest mouse <i>Reithrodontomys raviventris</i>					X				

No.	Common Name/ Scientific Name	East Contra Costa County HCP/ NCCP ¹	San Joaquin County MSHCP and Open Space Plan ¹	South Sacramento HCP ²	Yolo Natural Heritage Program ²	Solano HCP ²	East Alameda County Conservation Strategy ¹	Natomas Basin HCP ¹	Placer County Conservation Plan ²	Yuba-Sutter HCP/ NCCP ²
15	San Joaquin kit fox <i>Vulpes macrotis mutica</i>	X	X				X			
16	Suisun shrew <i>Sorex ornatus sinuosus</i>									
17	Townsend's big-eared bat <i>Corynorhinus townsendii</i>	X	X		X					
18	California black rail <i>Laterallus jamaicensis coturniculus</i>		X			X			X	X
19	California clapper rail <i>Rallus longirostris obsoletus</i>					X				
20	California least tern <i>Sternula antillarum browni</i>									
21	greater sandhill crane <i>Grus canadensis tabida</i>		X	X						X
22	least Bell's vireo <i>Vireo bellii pusillus</i>				X					
23	Suisun song sparrow <i>Melospiza melodia maxillaris</i>					X				
24	Swainson's hawk <i>Buteo swainsoni</i>	X	X	X	X	X		X	X	X
25	tricolored blackbird <i>Agelaius tricolor</i>	X	X	X	X	X	X	X	X	X
26	western burrowing owl <i>Athene cunicularia hypugaea</i>	X	X	X	X	X	X	X	X	X
27	western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>		X		X					X
28	white-tailed kite <i>Elanus leucurus</i>		X	X	X					
29	yellow-breasted chat <i>Icteria virens</i>		X		X				X	
30	giant garter snake <i>Thamnophis gigas</i>	X	X	X	X	X		X	X	X

No.	Common Name/ Scientific Name	East Contra Costa County HCP/ NCCP ¹	San Joaquin County MSHCP and Open Space Plan ¹	South Sacramento HCP ²	Yolo Natural Heritage Program ²	Solano HCP ²	East Alameda County Conservation Strategy ¹	Natomas Basin HCP ¹	Placer County Conservation Plan ²	Yuba-Sutter HCP/ NCCP ²
31	western pond turtle <i>Actinemys marmorata</i>	X	X	X	X			X ³	X ³	X
32	California red-legged frog <i>Rana draytonii</i>	X	X		X	X	X		X	
33	western spadefoot <i>Spea hammondi</i>		X	X	X			X	X	X
34	California tiger salamander (Central Valley DPS) <i>Ambystoma californiense</i>	X	X	X	X	X	X	X		
35	California linderiella <i>Linderiella occidentalis</i>				X					
36	conservancy fairy shrimp <i>Branchinecta conservatio</i>		X		X	X			X	
37	longhorn fairy shrimp <i>Branchinecta longiantenna</i>	X	X				X			
38	midvalley fairy shrimp <i>Branchinecta mesoovallensis</i>	X	X	X	X	X		X		
39	valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>		X	X	X	X		X	X	X
40	vernal pool fairy shrimp <i>Branchinecta lynchi</i>	X	X	X	X	X	X	X	X	X
41	vernal pool tadpole shrimp <i>Lepidurus packardii</i>	X	X	X	X	X		X	X	X
42	alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>		X		X	X				
43	Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>		X	X		X		X	X	X
44	brittlescale <i>Atriplex depressa</i>	X	X		X					
45	caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>		X							
46	Carquinez goldenbush <i>Isocoma arguta</i>									

No.	Common Name/ Scientific Name	East Contra Costa County HCP/ NCCP ¹	San Joaquin County MSHCP and Open Space Plan ¹	South Sacramento HCP ²	Yolo Natural Heritage Program ²	Solano HCP ²	East Alameda County Conservation Strategy ¹	Natomas Basin HCP ¹	Placer County Conservation Plan ²	Yuba-Sutter HCP/ NCCP ²
47	delta button celery <i>Eryngium racemosum</i>		X							
48	delta mudwort <i>Limosella subulata</i>		X							
49	Delta tule pea <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>		X					X		
50	dwarf downingia <i>Downingia pusilla</i>			X					X	X
51	heartscale <i>Atriplex cordulata</i>		X							
52	Heckard's peppergrass <i>Lepidium latipes</i> var. <i>heckardii</i>				X					
53	legenere <i>Legenere limosa</i>		X	X		X		X	X	X
54	Mason's lilaeopsis <i>Lilaeopsis masonii</i>		X			X				
55	San Joaquin spearscale <i>Atriplex joaquiniana</i>	X			X		X			
56	side-flowering skullcap <i>Scutellaria lateriflora</i>									
57	slough thistle <i>Cirsium crassicaule</i>		X							
58	soft bird's-beak <i>Cordylanthus mollis</i> ssp. <i>mollis</i>									
59	Suisun Marsh aster <i>Symphyotrichum lentum</i>		X							
60	Suisun thistle <i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>					X				

Notes:

¹ Plan is approved.

² Plan is in development.

³ Northwestern pond turtle (*Clemmys marmorata marmorata*) listed under the plan.

No.	Common Name/ Scientific Name	East Contra Costa County HCP/ NCCP ¹	San Joaquin County MSHCP and Open Space Plan ¹	South Sacramento HCP ²	Yolo Natural Heritage Program ²	Solano HCP ²	East Alameda County Conservation Strategy ¹	Natomas Basin HCP ¹	Placer County Conservation Plan ²	Yuba-Sutter HCP/ NCCP ²
<p>BDCP = Bay Delta Conservation Plan; HCP = habitat conservation plan; NCCP = natural community conservation plan Sources: East Alameda County 2009 Contra Costa County 2006 Natomas Basin Conservancy 2003 Placer County 2011 Sacramento County 2010 San Joaquin Council of Governments 2000 Solano County 2009 Sutter County and Yuba County 2011 Yolo County 2011</p>										

1.6 Overview of the Planning Process

1.6.1 Public Participation

The challenges of maintaining a reliable water supply and sustaining the ecological health of the Delta have been widely recognized at least since the 1980s, with roots going back much farther; consequently the BDCP can be thought of as the latest and most comprehensive plan addressing these needs. As such, it owes much to these earlier efforts, the most recent of which was CALFED, a collaboration among 25 state and federal agencies that came together with a mission to improve California's water supply and the ecological health of the Delta. The BDCP, CALFED, and earlier planning efforts were led and coordinated by public agencies, but have always had a high level of involvement by other concerned citizens, private parties, nongovernment organizations, and independent scientists. The following discussion focuses on the participation and contributions of these groups during the development of the BDCP.

The NCCPA requires the establishment of a process for public participation and outreach throughout the development of a plan (Fish & Game Code 2815). Similarly, policies governing the ESA emphasize the importance of public involvement in the development of large-scale HCPs and encourage plan participants to facilitate the engagement of the public (65 FR 106). At the initial stage of the BDCP planning process, an outreach program was developed to provide the public a wide range of opportunities to learn about the various elements of the Plan and provide input during the course of its development.

Early in the BDCP development process, the Steering Committee formed a number of standing working groups and technical teams, as well as *ad hoc* groups, to focus on approaches and solutions to specific issues related to Plan development. The working groups dealt primarily with broad topics related to such matters as biological goals and objectives, conservation strategies, water conveyance, other stressors, and governance, and developed recommendations which were presented to the Steering Committee for consideration. Technical teams were tasked with responsibility for developing proposed approaches to technical and scientific issues. These teams were co-chaired by subject-matter experts who often represented Steering Committee members, and were staffed by appropriate technical experts. All of these subgroups were composed of or were informed by technical experts representing a broad range of disciplines relevant to various aspects of plan development. Meetings of the working groups and technical teams were noticed on the BDCP website and open to the public.

The working groups and technical teams included the following.

- Conservation Strategy Working Group
- Biological Goals and Objectives Working Group
- Conveyance Working Group
- Other Stressors Working Group
- Implementation Structure/Governance Working Group
- Analytical Tools Technical Team
- Fish Facilities Technical Team

- Habitat and Operations Technical Team
- Habitat Restoration Program Technical Team
- Terrestrial Resources Subgroup
- Synthesis Team
- Integration Team
- Logic Chain and Metrics Technical Group

All meetings of the Steering Committee, as well as working groups and technical teams, were open to the public. Such meetings could also be attended by teleconference, with live or archived access to presentations provided through the internet. Initially, a group email list was compiled and used to provide interested parties with Steering Committee meeting dates, times, and handouts. Later, an electronic listserv was developed and maintained to ensure that interested members of the public were notified of upcoming meetings and that draft documents pertaining to the planning process were distributed as they became available. All documents discussed by the Steering Committee, working groups, and technical teams were made available to the public on the BDCP website. At BDCP meetings, both oral and written public comments were taken, and those comments received in writing were posted to the website. Meeting notes also reflected comments and input offered by the public.

In 2008, DWR, Reclamation, NMFS, and USFWS, the lead agencies in the CEQA and NEPA environmental review processes, hosted ten scoping meetings throughout California. These meetings occurred at locations within the Sacramento Valley, the primary watershed through which stored water supplies are conveyed to and through the Delta to project pumping facilities; other Delta communities; the San Francisco Bay Area; the San Joaquin Valley; and southern California. Within the same year, DWR held eight landowner workshops in various Delta communities that focused in particular on the temporary entry permit process and on updating these communities on the status of the BDCP planning process, and the environmental review process associated with the Plan. In addition, the California Natural Resources Agency convened town hall meetings in Sacramento, Stockton, and Walnut Grove to further inform Delta communities about the BDCP and to respond to questions about the broader array of public agency efforts underway in the Delta, including the BDCP, pertaining to land use, flood protection, ecosystem restoration and governance.

In spring 2009, the Steering Committee produced and distributed a summary update about the development of the Plan to interested members of the public, including details of individual conservation measures that were being considered as part of the BDCP conservation strategy. NEPA and CEQA lead agencies conducted 12 additional scoping meetings throughout California, seeking public input about the scope of BDCP actions and potential alternatives to the proposed action. Six of these scoping meetings were held in communities in or in close proximity to the Plan Area, including Brentwood, Clarksburg, Davis, Fairfield, Sacramento, and Stockton. A Webinar was hosted in advance of these meetings to provide more in depth information about the BDCP process and to afford individuals unable to attend the workshops in person an opportunity to access to this information and interact with the BDCP representatives.

During fall 2009, after the release of a draft of a partial conservation strategy, four technical workshops were held in the Delta communities of Brentwood, Stockton, Walnut Grove, and West Sacramento to solicit input about the planning assumptions, biological rationale, and feasibility of

1 draft conservation measures, as well as to seek recommendations for additional or different
2 conservation measures. Input from the workshops was compiled and conveyed to the BDCP Steering
3 Committee for its consideration and posted on the BDCP website. Three fact sheets were distributed
4 that described the status of the Plan's development, the draft conservation strategy generally, and
5 proposed water conveyance and flow and habitat restoration conservation measures more
6 specifically.

7 Throughout 2010, BDCP representatives continued to conduct community briefings throughout the
8 state, but primarily with organizations and local jurisdictions located within the Delta. In addition,
9 informational materials about the BDCP, including fact sheets and issue summaries, evolved over
10 time to ensure that the public was kept current with BDCP developments. In December 2010, the
11 California Natural Resources Agency disseminated a summary of the Plan, its status, and
12 outstanding issues to keep the public informed during the transition to a new state administration.

13 As the planning process moved forward in the beginning of 2011 under a new state administration,
14 the BDCP effort remained heavily focused on incorporating public input from varying interest
15 groups. In April 2011, a public meeting was convened by California Natural Resources Secretary,
16 John Laird, and Deputy Secretary for the U.S. Department of the Interior, David J. Hayes, to announce
17 a new, more inclusive process for stakeholder engagement and issues resolution. The opportunity
18 for input and participation through issue specific working groups and public meetings began in June
19 and continued through the remainder of the draft Plan's development.

20 The working groups formed in 2011 focused on solutions to outstanding issues that need to be
21 resolved in order to complete the Draft BDCP. The working groups were made up of stakeholders
22 with a key interest in the working groups' charge. Their input at working group meetings
23 contributed to elements of the Draft BDCP. The working groups were open to the public, and each
24 working group meeting included an opportunity for public comment. The working groups convened
25 in 2011 focused on the following topics:

- 26 • Biological Goals and Objectives for Covered Fish Species
- 27 • Yolo Bypass Fishery Enhancement Plan
- 28 • Governance
- 29 • South Delta Habitat
- 30 • Financing

31 Meetings were held with stakeholders on the topics of Delta Agriculture and its compatibility to
32 BDCP, Delta Water Quality, and on Adaptive Limits of Water Operations Criteria. Working groups
33 were not convened on these topics, pending further development of basic concepts.

34 In addition to the working groups, a series of public meetings were held throughout 2011 to discuss
35 the progress of the working groups and overall Plan development, and provide an opportunity for
36 public comment and questions. Meetings were held in June, August, and September in West
37 Sacramento and November and December in downtown Sacramento. Topics of the meetings focused
38 on plan development, schedule updates, alternatives for analysis, conveyance facility
39 characterization and siting, demand management, and updates from other agencies on Delta-related
40 issues.

The project website continued to be updated on a weekly basis with information about upcoming working groups meetings, documents of interest pertaining to plan agreements, schedule information. Additionally, beginning mid-year, an email listserve was used weekly to notify stakeholders about upcoming meetings and issues of importance.

Over the course of the planning process, representatives of the BDCP conducted more than 400 briefings for community organizations, local jurisdictions within and adjacent to the Plan Area, environmental organizations, urban and agricultural water users groups, and recreational and commercial fishing organizations. Public presentations were made throughout the state, and information about the BDCP was regularly distributed, including updated fact sheets explaining the purpose of the Plan and describing its various components. To further facilitate the dissemination of information, the BDCP maintained a project website at www.baydeltaconservationplan.com. Additional public outreach and involvement activities were conducted around major milestones in the planning process, and in compliance with NEPA and CEQA environmental review processes.

[Note to Reviewers: Public participation and comment into the Plan will continue through 2012 with the release of the Public Draft. Public hearings will be held to allow for formal comments on the documents, and those comments will be considered and incorporated into the Final Plan to be released in December 2012.]

1.6.2 Integration of Science

The BDCP is built on and reflects the extensive body of scientific investigation, study, and analysis of the Delta compiled over several decades (CALFED Science Program 2008), including the results and findings of numerous studies initiated under the CALFED Bay-Delta Science Program and the Ecosystem Restoration Program, the long-term monitoring programs conducted by the Interagency Ecological Program (IEP), research and monitoring conducted by state and federal resource agencies, water contractor scientists, and research contributions of academic investigators.

In addition, the BDCP Steering Committee considered a number of other recent reports on the Delta, including reports of the Governor's Delta Vision Blue Ribbon Task Force (January and October 2008) and several recent reports of the Public Policy Institute of California (2008). Many elements of the BDCP conservation strategy parallel the recommendations of these other reports.

1.6.2.1 Independent Science Advisory Process

To ensure that the BDCP would be based on the best scientific and commercial data available, the Plan participants sought input and advice from independent scientists on the key elements of the Plan. Consistent with the requirements of the NCCPA and the policy directives of the five-point policy (65 FR 35242), the BDCP Steering Committee and later DWR directed facilitators to convene independent scientists at many key stages of the BDCP planning process, enlisting well-recognized experts in ecological and biological sciences to produce recommendations on a range of relevant topics, including approaches to conservation planning for aquatic and terrestrial species in the Delta and developing adaptive management and monitoring programs. Among other things, the independent scientists provided recommendations and guidance on the following issues.

- Scientifically sound conservation strategies for species and natural communities proposed to be covered by the Plan.

- A set of reserve design principles that addresses the needs of species, landscapes, ecosystems, and ecological processes in the Plan Area proposed to be addressed by the Plan.
- Management principles and conservation goals that could be used in developing a framework for the monitoring and adaptive management component of the Plan.
- Identification of data gaps and uncertainties so that risk factors may be adequately evaluated.

The Steering Committee or DWR assembled seven different groups of independent science advisors during the development of the BDCP.

- **Initial BDCP independent science advisors (September 2007).** The first group provided guidance on approaches to planning for the conservation of aquatic species and ecosystem processes in the Delta.
- **Independent science advisors for nonaquatic resources (September 2008).** The second group considered approaches to planning for the conservation of nonaquatic resources in the Plan Area.
- **Independent science advisors on adaptive management (December 2008).** This group focused on matters related to the development of an adaptive management decision-making process for the BDCP informed by data and information generated by monitoring and research efforts.
- **Science input to the DRERIP evaluation process (2008–2009).** The Steering Committee undertook a rigorous process to incorporate new and updated information and to evaluate a wide variety of issues and approaches as it formulated a cohesive, comprehensive conservation strategy. As part of this effort, multiple teams of experts used the CALFED Bay-Delta Ecosystem Restoration Program’s Delta Region Ecosystem Restoration Implementation Plan (DRERIP) Scientific Evaluation Process to evaluate draft conservation measures.
- **Independent science input on logic chain approach (February/March and July/August 2010).** The Delta Science Program provided assistance in assembling two groups of independent science advisors to evaluate and provide recommendations on the logic chain planning structure. The logic chain was proposed as a framework for linking recovery goals for covered fish species with BDCP goals, objectives, conservation measures, monitoring, and adaptive management. Two science reports on the logic chain were prepared.
- **Independent science advisors for aquatic resources (2011).** Advisors were next convened by an independent facilitator to refine biological goals and objectives for covered fish species.
- **Independent science advisors review of effects analysis (October 2011 and May 2012).** The Delta Science Program, an arm of the Delta Stewardship Council, convened two panels of independent scientists to review the effects analysis. The first panel reviewed the first two appendices, Appendix 5.A, *Conceptual Foundation and Analytical Framework*, and Appendix 5.B, *Entrainment*. The second panel reviewed the remaining technical appendices of the effects analysis and early drafts of the conclusions.

In addition, the National Academy of Sciences National Research Council convened a Committee on Sustainable Water and Environmental Management in the California Bay-Delta, sponsored by USFWS. This committee issued two reports, in 2010 and 2011, on the Bay-Delta and BDCP. For a

detailed summary of each of these independent scientific reviews and the related scientific reports, see Chapter 10, *Integration of Independent Science in BDCP Development*.

1.6.3 Organization

The BDCP document consists of an executive summary, 12 chapters, and 19 appendices. The organization of this document is outlined as follows.

- The *Executive Summary* provides an overview of the BDCP, including descriptions of the background, purpose, covered activities, conservation strategy, and approach to plan implementation. **[Note to Reviewers: The Executive Summary will be provided in a subsequent draft of the BDCP.]**
- Chapter 1, *Introduction*, sets the context for the development of the BDCP, including the purpose and scope of the Plan, the planning and conservation goals and objectives, and the expected regulatory outcomes. Chapter 1 also describes the process that guided the development of the Plan.
- Chapter 2, *Existing Ecological Conditions*, describes existing environmental conditions in the Plan Area, providing the context in which the BDCP and its various elements have been developed.
- Chapter 3, *Conservation Strategy*, sets out the BDCP conservation strategy, including the biological goals and objectives of the Plan, the approach to conservation adopted by the Plan, the range of conservation measures for aquatic and terrestrial species and habitats, and the adaptive management and monitoring program.
- Chapter 4, *Covered Activities and Associated Federal Actions*, identifies the activities proposed for regulatory coverage, including existing and future actions.
- Chapter 5, *Effects Analysis*, includes an analysis of the beneficial and adverse effects of the BDCP on covered natural communities and covered species. The chapter also describes the indirect and cumulative effects resulting from the implementation of the BDCP conservation strategy and the covered activities.
- Chapter 6, *Plan Implementation*, addresses matters relating to the implementation of the BDCP, including the schedule for the implementation of actions, the reporting process to ensure compliance, regulatory assurances anticipated by the entities seeking authorizations, measures to address changed circumstances, and the approach to unforeseen circumstances.
- Chapter 7, *Implementation Structure*, sets out a governance structure to ensure successful long-term implementation of the Plan.
- Chapter 8, *Implementation Costs and Funding Sources*, estimates the costs of Plan implementation and identifies the sources of funding that will be relied on to implement the Plan.
- Chapter 9, *Alternatives to Take*, sets out the alternatives to take that were developed and considered and the reasons why they were not adopted.
- Chapter 10, *Integration of Independent Science in BDCP Development*, describes the independent science advisory process and the recommendations provided by these scientists.

- Chapter 11, *List of Preparers*, lists the preparers of the BDCP.

- Chapter 12, *References*, lists the sources cited in the Plan.

The appendices are as follows. **[Note to Reviewers: The appendices have not been finalized. A comprehensive list will be provided in a subsequent draft of the BDCP. Appendices will be renumbered sequentially (Appendix A, B, C, etc.)]**

- 1.A, *Evaluation of Species Considered for Coverage*.
- 2.A, *Covered Species Accounts*.
- 2.B, *Vernal Pool Complex Mapping for the BDCP*.
- 2.C, *Climate Change Implications and Assumptions*.
- 3.A, *Background on the Process of Developing the BDCP Conservation Measures*.
- 3.C, *Avoidance and Minimization Measures*.
- 3.D, *Natural Community and Covered Species Habitat Existing Condition—Acreages by Conservation Zone*.
- 3.E, *Adaptive Management and Monitoring Program*.
- 5.A, *Conceptual Foundation and Analytical Framework for Effects Analysis*.
- 5.B, *Entrainment*.
- 5.C, *Flow, Passage, Salinity, and Turbidity*.
- 5.D, *Contaminants*.
- 5.E, *Habitat Restoration*.
- 5.F, *Biological Stressors and Covered Fish*.
- 5.G, *Fish Life Cycle Models*.
- 5.H, *Aquatic Construction Effects*.
- 5.I, *Other Federal Regulatory Analyses*.
- 5.J, *Scenario 6 Comparison*.
- 5.K, *Effects on Natural Communities, Wildlife, and Plants*.
- 8.A, *Implementation Costs Supporting Materials*.

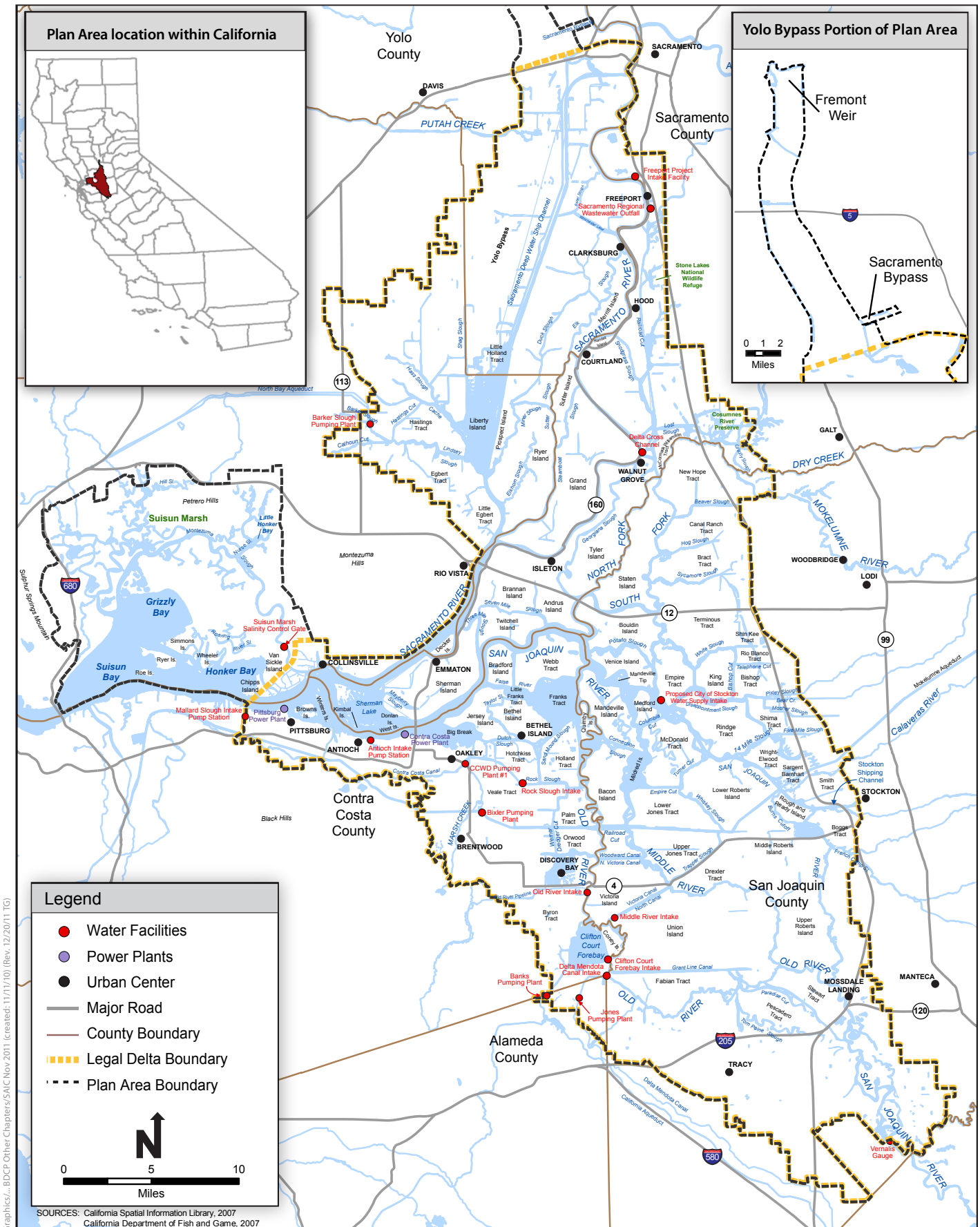
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**Figure 1-1
BDCP Plan Area Location**

